AYURVEDA: A STUDY OF EASTERN PHILOSOPHY OF MEDICINE

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by

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ABSTRACT

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This paper will evaluate the philosophy of Ayurvedic medicine. Ayurvedic medicine originated in India but its use is now expanding to other countries. It is one of the most ancient forms of medicine still practiced in India and its theoretical foundation can be effective in other parts of the world. The foundation of Ayurveda is based upon a balance of three forces—vata, pitta, and kapha. Any vitiation from normalcy of one of the three results in disease. These three doshas, or forces, each consist of two different natural elements which contribute to their qualities. Vata is a combination of air and space which make its properties dry, light, and cold. Pitta is a mixture of water and fire, making it slightly oily, hot, and in the liquid form. Finally, kapha consists of earth and water, thus it is oily, heavy, and cold. Each dosha houses a seat in a different region of the body and is responsible for different functions during digestion. Furthermore, there are seven dhatus, or tissues, in the body. When food is consumed, it is converted to one of the dhatus and thus provides nourishment for the body.

Disease results from a buildup of ama, a buildup of undigested food. This occurs when the digestive fire in one's body does not effectively convert food into the proper dhatu, or tissue. The formation of the undigested food creates illness and its removal results in the restoration of one's health. To rid the body of ama, Panchakarma treatment must be used. The different types of treatment are based on which dosha has accumulated and is disturbed the most. The more popular school of thought includes the following five treatments: vamana, virechana, basti, nasya and rakthamokshana. The final section of the paper suggests the value of the possible application of Ayurvedic methods in order to devise a more effective treatment. Using the Ayurvedic perspectives for patient evaluation will give medical practitioners a different paradigm for understanding a disease.

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INTRODUCTION

"The very success of medicine in a material way may now threaten the soul of medicine. Medicine is something more than the cold mechanical application of science to human disease. Medicine is a healing art. It must deal with individuals, their fears, their hopes and their sorrows. It must reach back further than a disease that the patient may have to those physical and emotional environmental factors which condition the individual for the reception of the disease." **~ Dr. Walter Martin, former AMA president**

Medicine can be viewed as a healing art; it involves a complex process of observation, examination, and interpretation. There are several different types of medicine practiced throughout the world. The different methods correspond to the culture of a region, the resources available, environmental concerns, and the traditional practices within the society. India is representative of a diverse medical community in that there are four main forms of medicine that are regularly practiced and respected—Ayurveda, Homeopathy, Siddha, and Allopathy. This paper will focus on the philosophy behind Ayurvedic medicine.

Ayurveda literally means, the science of life, and was discovered thousands of years ago. Ayurveda recognizes the interaction between humans and nature; ultimately the same elements that compose our body also make up the Earth; humans are microcosms of the macrocosmic universe. A Western scholar of Ayurveda, Robert Svobda writes, "Ayurveda is a philosophy which allows physicians to see a patient the way Nature sees them." If the same nature that dwells within us resides outside of us, one type of nature will lead to knowledge of the other.

Such is the philosophy of Ayurveda—human and Nature as one. Ayurveda's nomenclature for nature's constituents is space, air, fire, water, and earth, collectively

termed the Pancha Maha Bhutas; our bodies are comprised of a particular arrangement of these five components. Originating in the Sanskrit language, these words provide the meaning of a function rather than substance or object. For example, prithvi, or earth, is not the earth that we see a picture of with large land masses surrounded by water. Rather, prithvi is matter, having the function of occupying space, providing structure, and having mass. Any visible object has predominance of prithvi, in addition to the other four bhutas. A tree has earth, in the form of the substances we see such as the bark, leaves, roots, etc. It also has water transported within to provide it with life—without water the leaves fall and the tree would die. It has fire to convert the absorbed nutrients to leaves and bark, and air which fills the unoccupied space within and allows for transport to take place. One tree can grow for hundreds of years, evolving but not becoming a new species; the five elements share their respective responsibilities all throughout the tree's life.

Similarly, humans have evolved into more advanced species yet they are still made up of the same material that they were centuries ago. Therefore, traditional practices can still be applied in an accurate manner in today's world. However, the human body is no different than the body that existed thousands of years ago. Thus, the techniques discovered at the time of its origin can still apply today. Our ancestors managed to overcome illnesses and cure diseases not by trial and error, but by observation of the human body's interaction with nature. Their techniques not only applied in destroying disease, but also in preventing it. The purpose of this paper is to

examine the various dimensions of Ayurveda, and evaluate its contribution to the modern worldwide practices of medicine.

The process of a growing appreciation for Ayurvedic medicine has begun with its recent introduction into the western world. It can be witnessed by the rise in Ayurvedic institutions and allopathic physicians who have become scholars of Ayurveda as well. Drs. David Frawley and Vasant Lad have all helped shift knowledge of the ancient traditions to the new world. Dr. David Frawley founded California College of Ayurveda in 1995 which is one of the few state approved institutions in America. A born and raised American, Dr. Frawley has taken particular interest to both Indian and Chinese forms of alternative medicine. He studied alongside Dr. Vasant Lad who founded the Ayurvedic Institute in New Mexico over two decades ago, in 1984. Dr. Vasant Lad is the author of many Ayurvedic texts. Though the aforementioned have all contributed to introducing Ayurveda to the West, many are still skeptical of its contribution to modern medicine because the concepts may appear mystical or without scientific evidence. However, as one reads this paper, it is vital to remember that this form of medicine developed over three thousand years ago and therefore its foundation does not entail the biochemical understanding and evidence that modern medicine can provide.

The purpose of this paper is to highlight the main concepts of Ayurveda, and examine its significance in today's world of medicine. A background of the medicine's history will be given, including origins of Ayurveda's ancient scriptures. They are now the only resources the modern world has to information of ancient medicine. With this knowledge, the reader can better understand the evolution of the Pancha Maha Bhutas. A

basic knowledge of Ayurveda will then be provided in order for the reader to understand how a patient is diagnosed and treated. The main topics to be discussed include, but are not limited to, knowledge of the three forces of the body, seven tissues, determining one's constitution, food as medicine, and understanding how toxins are formed to result in disease. Treatment in the form of herbal medicines and Panchakarma will also be thoroughly discussed.

HISTORY

Ayurveda's origin is crucial to the development of its medical theory. India has a rich scientific history, Ayurveda in particular dates back 3500 to 5000 years ago. It is the most ancient form of medicine in India and traces back to Lord Brahma (the Hindu God of Creation), according to Hindu mythology. Charaka Samhita, written in the first century AD, is the oldest text that exists in Ayurveda. Additionally, there are two other main texts that are studied today Susruta Samhita, and Ashtanga Hridayam (Table 1). The latter is a compilation of the Charaka and Susruta Samhita, which have different approaches to Ayurvedic treatment.

Charaka Samhita is known as the school of physicians. It compares more of the physiological, anatomical, and pathogenic interpretations and treatment for disease. Similar to a General Practitioner in allopathic medicine, Charaka Samhita is the text associated with noninvasive treatment. Alternatively, Susruta Samhita is known as the school of surgeons. This text contains details of surgical techniques for amputations, fractures, wounds, etc. It also discusses the importance of specific points on the body known as marmas. When injured, these points can be severely damaging to the body, even causing immediate death. These texts were very detailed in their methods of treatment and are thus still applicable today. The importance of a physician's understanding of the patient's mind, body, and soul when interpreting the cause of a disease is emphasized in Charaka Samhita. It claims that this knowledge is more important than being able to identify the disease using a specific nomenclature, as done in modern medicine.

DIVISIONS OF STUDY

Just as modern medicine has divisions and specialties, Ayurveda has eight main branches (Table 2). These branches are studied by all Ayurvedic scholars. They serve to divide cases and diseases, not the type of practitioner. The first is Kayachikitsa which is general, or internal medicine. All diseases that result from digestive problems are dealt with here. This branch describes the six stages of diseases: aggravation, accumulation, overflow, relocation, buildup in new site, and manifestation into disease. Under Kayachikitsa, the physician also determines the patient's constitution as well as the nature of the disease. Balachikitsa is medicine pertaining to children, also known as Pediatrics. In addition to Pediatrics however, Balachikitsa describes pre and postnatal activities for an expecting mother in order to have a healthy child. Grahachikitsa in allopathic terms is the study of Psychiatry. Ayurveda views psychiatric problems as mental diseases caused by the entrance of evil spirits or microorganisms into the body. Typically, modern medicine refers to psychiatric disorders as imbalances in chemical concentrations. Because the causality differs in this area between the two types of medicine, the types of treatment will also differ greatly. Urdvangachikitsa is what Westerners know as Ear, Nose, and Throat. This realm of Ayurveda includes infections to any one of the three mentioned body parts.

Thus far, each division has catered to antigens entering the body to cause a disease. External forces can also push the body out of harmony and result in a disease. The division of Ayurveda that deals with these types is Shalyachikitsa. In it, surgery is performed to physically remove the external cause from the body. Shalyachikitsa has

methods for clearing out obstructions in passageways, such as the intestines, and even for removing kidney stones. Toxicology in Ayurveda is known as Agada tantra chikitsa. Patients seeking this treatment suffer from poisons which may be extracted from a variety of things including animals and plants. Rasayana chikitsa is rejuvenation therapy. It is often comparable to Geriatrics in allopathic medicine however it is not exclusive to the elderly. Rejuvenation therapy is helpful to people suffering from chronic diseases. Lastly, Vrishachikitsa is a treatment seeking to improve fertility. Patients with problems of sterility, impure semen or menstrual blood, or other reproductive issues are seen here.

The most common branch of Ayurveda that is practiced today is Kayachikitsa. It contains the broadest range of diseases ranging from arthritis to cancer. In modern medicine a general practitioner must refer a patient to a more specialized physician for more severe cases. In Ayurveda, there is no such formal reference via a general practitioner. Because all diseases are viewed in terms of an imbalance in harmony, every physician should be capable of treating any disease. The eight branches are merely divisions of knowledge, not of physician types. Allopathic medicine has some areas of concentration that are not explicitly included in Ayurveda's classifications and vice versa. For example, Dermatology is a highly specialized area in modern medicine. Diseases of the skin are categorized with Kayachikitsa in Ayurveda because they are generally viewed as impurities of the blood; the purification of blood does not require specialization in this form of medicine. Another important difference is the inclusion of rejuvenation techniques in Ayurveda which are absent in modern medicine. These methods take more time as the body cannot undergo the pressure of revitalizing itself

over a short period of time. Rasayana is not only given to diseased patients. For example, before conceiving a child, a man and woman may undergo rejuvenation to help assure that they produce a healthy child. This treatment serves as a purification process which can be used to fight a disease or merely better one's health. When combined, Ayurvedic and allopathic medicine cover all aspects of medicine, but separately each one is less complete. Therefore, a physician's knowledge of both forms will help him or her to better serve the patient. A more widespread knowledge of medicine will provide the physician with more variety in choosing the most appropriate treatment.

EVOLUTION OF THE PANCHA MAHA BHUTAS

In Ayurveda, the manifestation of the universe parallels the development of humans. Humans evolved in the same manner as the universe, just in a different realm. Though the processes are similar, they occurred consecutively—the universe gave rise to humans. The unmanifested universe, or avyakta, is the universe without order or life. It is merely matter guided by consciousness. In avyakta, there is no concept of dimension, direction or time. Here, the experienced and experiencing occur simultaneously. The unorganized matter is termed prakruti (this is different from human prakruti which will be discussed later), and the unseen consciousness is called purusha. Purusha is knowledge that guides and manipulates prakruti. In a sense, the prakruti is the universe's body and the purusha, its mind. The combination of prakruti and purusha form mahat. Mahat is a kind of knowledge; it is the ability to think, make decisions, discriminate, etc. Even at this level, there is no distinction of matter; it is the random combination of matter with consciousness. Once mahat begins to organize and become more defined, ahamkara is formed. Grossly, all humans are the same—every body has a brain, esophagus, stomach, liver, kidneys, lungs, heart, etc. However, ahamkara provides each human body with its uniqueness, with the concepts of personality and individuality. Ahamkara has three forms, and their combinations create various innate aspects of the body: rajas, satva, and tamas (Figure 1). Please note that the rajas, satva, and tamas referred to here differ from those involved with forming the doshas, or forces, of the mind.

Satva is sometimes called the operator; it is responsible for balance and continuity. Rajas provides division and growth to everything in the universe. Some view

it as the generating force as it aids in creation and development. The destructive energy is known as tamas. Tamas causes degeneration to all matter. Everything in the universe is composed of satva, rajas, and tamas. Satva and rajas provide the body with perception, mobility, and the mind. They instill the knowledge of the five senses: sound, touch, sight, taste, and smell. A baby does not have to learn how to swallow milk, hear outside voices, or distinguish between things that taste good or bad. Innately, he or she is provided with the ability to interpret these things. Satva and rajas also provide knowledge of the five motor functions: talk, grip, walk, procreate and excrete. While everyone must be trained to carry out these tasks, the processes are all involuntary—one does not think about how to activate the vocal cords to talk, or prepare the muscles for movement, he or she just talks, or moves. Lastly, satva and rajas constitute doshas of the mind. The mind is what transforms the knowledge of perception and mobility into action. It interprets what the senses observe, processes it, and responds in terms of emotions and/or actions. Without the five senses, the mind is immaterial and without the mind, observation from the senses cannot be interpreted (Table 3).

The ability to observe the five senses is provided by satva and rajas, however they are produced by the combination of tamas and rajas. Only after such combination can one's observations be complete. When sound, touch, sight, taste and smell have been combined and properly arranged, they create the Pancha Maha Bhutas: space, air, fire, water and earth respectively (Figure 2). These five elements are not generated simultaneously. First comes the existence of space, only then can air exist as it has been provided with an area to fill. Air's movement creates heat as a result of friction from the

molecules. This heat develops into fire. Then, the heat generated from the fire creates condensation of air in the space, resulting in water. Finally, the mixture of space, air, fire, and water combine to create earth. These five elements then serve to compose all matter in the universe. Because Ayurveda views the human body as a microcosm of the macrocosmic universe, it too is composed of the five elements. Modern science recognizes the origin of the universe as a result of the Big Bang Theory. It suggests that the universe is merely the core of continually expanding matter. Thus, organisms on this planet originated from this matter's expansion and must be made up of the same components. The Ayurvedic and modern theories of the universe's creation differ in their reasoning scientifically, but conceptually, they both recognize the same finite components by which all creation is formed.

In terms of Ayurvedic philosophy, the foundation of every human body is made of earth and water. Therefore, all humans share these two elements in the exact same proportions. The body is only one dimension of existence. Another dimension of the body, that which differentiates one human from another, is his or her prakruti, or constitution. One's prakruti is determined by the arrangement and concentration of the five elements beyond the shared elements in the subtle body— earth and water. For example, half of person A's subtle body may equally consist of earth and water (25% of each). The other half may have 10% each of space, air, fire, water, and earth. Thus, person A has 10% space, 10% air, 10% fire, 35% water, and 35% earth (Figure 3). Note that it is rare for an individual to have equal amounts of each element. If this is the case, they are at the healthiest state attainable and are thus the least prone to disease. The

distribution of the five elements will arrange to form the three doshas, or forces, within the body. The three doshas of Ayurvedic medicine are vata, pitta, and kapha (Table 4). Vata is the mixture of air and space, pitta is the combination of fire and earth, and kapha is earth with water. Therefore, based on the previous explanation, kapha is the basis of the physical body shared by all humans. One's prakruti is determined by the amount of each dosha in the body. However, the kapha based foundation shared among every human body is not taken into account when establishing prakruti. Ayurvedic practitioners have observed individuals' prakruti to be somewhat inherited, a concept modern medicine uses genetic material to explain.

The qualities of the Pancha Maha Bhutas combine to form the qualities of the doshas. Space has the qualities of clarity, hollowness, and identity. Air has the properties of being dry, cool, rough, and light. Fire is hot, penetrating, drying, rough, light, and clear. Water is oily, satiating, heavy, adhesive, and flowing. Earth is heavy, cool, dry, and slow. Vata is air with space and thus has their combined properties; it is dry, light, cold, rough and mobile. It is important to remember that these properties are only forces. When an area in the body shows any of these qualities, vata is thought to be present. The same concept applies for pitta and kapha. Pitta, which is water with fire, is partly oily, penetrating, hot, liquid, and easily spreads. Lastly, kapha, the combination of earth and water, is very oily, cold, heavy, slow, smooth, slimy, and stable. When a person consumes food that shares a property with one of the doshas, that dosha is irritated and temporarily increased. Alternatively, eating foods with a quality opposite to a particular dosha will decrease it. Such manipulation of the levels of the doshas is the

basis of treatment in Ayurveda. The formation of each individual's prakruti aids physicians in determining that individual's susceptibility to diseases, as well as the strengths and weaknesses of one's body. Every individual must maintain their balance of doshas as determined by their prakruti in order to remain healthy.

DOSHAS

The three doshas are believed to have regions within the body where they can be found in high concentration. Though they are by no means restricted to these areas, they are responsible for more actions within them. Vata is the area below the navel, it is the dosha of mobility which the legs provide. However, vata is also responsible for the internal transport of material. Another of its responsibilities is excretion of wastes, and the organs involved (bladder and intestines) also fall under this area. Pitta is in the region between the clavicle and the navel. Its primary purpose is digestion, and purification of the blood, which both occur in this region. Finally, the region above the clavicle bone (mainly the head and neck) is thought to be the seat of kapha. It is the least mobile region of the body and houses the brain which is a huge mass containing several of kapha's properties. The doshas are not limited to the mentioned organs. They carry out their individual responsibilities throughout each cell in the body, therefore they are present everywhere. Beyond their specified regions, they can be found in higher concentrations in other organs as well. Vata is found predominantly in the colon and bladder but also is prominent in the brain, thighs, bones, kidneys, and pancreas. Its properties suggest these organs as it is primarily responsible for excretion and movement. Pitta is found in the small intestine, liver, spleen, kidney, heart, uterus and pancreas. Lastly, kapha resides in the stomach, lungs, bladder, pancreas and testes.

Based on their concentrations in the body, each of the three doshas has five unique functions in the body. Vata is responsible for the senses, intellect, digestion, excretion and touch. It provides individuals with sensory observations which lead to

enthusiasm, reasoning, and creativity. It also supplies the brain with intellectual capacity for memory and wisdom. In the digestive process, vata is part of the final stages, and thus helps in elimination of food from the body. Lastly, tactile sensation is supplied by vata as it is partly composed of air. Pitta is in charge of eye function, skin, desires, digestion and blood. Pitta's nature of fire and heat provide it with the responsibility of vision. It also gives color to blood and thus provides complexion in the skin. Within the brain, pitta is responsible for controlling one's desires. It is the primary force in digestion, supplying the fire to transform food to nutrients or waste. Lastly, kapha is responsible for moisturizing body parts as well as internal organs, the perception of taste, controlling the heart, and lubricating joints. Kapha's unctuousness allows it to moisturize external areas of the body such as the skin. It also lubricates within the organs, allowing material to flow through channels with ease. The water portion of kapha provides it with the sense of taste. Kapha is the dosha associated with strength, thus it has the power to control the heart, the most important muscle of the body. Finally, it lubricates areas between joints preventing grinding of the bones which can lead to many diseases involved with bone degeneration.

The classification of the doshas into the aforementioned areas has been described in the ancient texts. They are very useful when understanding the cause of a disease. For example, when a patient has problems of acne on his or her face, the physician views the problem as a rise in pitta's activity, even though the face is in kapha's region of the body. The drugs prescribed will primarily be used to lower the heat provided by pitta—the source of oil, heat, and penetration causing the acne. Allopathy has a similar approach,

but it is described in different terms. Most medicines prescribed for patients with acne are used to dry and cool the skin, properties opposite of pitta. In fact, many over-the-counter facial scrubs advertise the cool sensation they provide after washing. In addition, people with acne are usually advised to avoid fried and spicy foods—those that are pitta in nature. This is just one example where Ayurveda is compatible with western remedies. If an asthmatic patient approaches an Ayurvedic doctor, the first thing the physician will note is the increase of vata which is causing the alveoli in the lungs to become dry, resulting in wheezing and shortness of breath. In order to remove the vata, the doctor will prescribe a medicine that is lubricating and moisturizing—a kapha increasing medicine. Similarly, the most common allopathic medicine for asthma is an albuterol which is an inhaler that attempts to restore the wetness in the cells within the lungs. An albuterol is also kapha increasing with attempts to lower vata's vitiation. Many more parallels between the two types of medicine will be examined. The similarities prove that ultimately, medicine is the art of destroying a disease, curing a patient, and restoring one's health. Art is merely interpretation of the observer, and no interpretation can be proven for accuracy. Similarly, different philosophies on treatment reflect different understandings of how a disease is caused. In the end, the disease is the same and the patient is treated with the eventual goal of maximum health.

Each cell in Ayurveda is composed of the three doshas, and thus the five elements. Ayurveda does not recognize the identity of mitochondria, golgi apparatus, ribosomes, etc. but rather the effect of such organelles can be organized into the three doshas, and the forces they provide. For example, the golgi apparatus is primarily

responsible for the transport and movement of nutrients out of the cell. It is therefore vata predominant since vata is comprised of air and space which emphasize the function of movement. Also, the cytoplasm is a gel-like substance primarily having the kapha qualities of lubrication and stability. When comparing the two medical practices, it becomes clearer how the doshas are forces with particular qualities rather than physical objects. It can be inferred that allopathy has provided a systematic nomenclature for the properties of causes given by Ayurveda.

Ayurveda uses the concept of three doshas to explain all aspects of life. Such application allows it to interpret the balance of vata, pitta, and kapha in each individual and also to determine what changes can be made to a person having unbalanced doshas. First, each dosha is prominent during a particular time of the day. Vata is strongest between 2 and 6 AM and PM. This is generally the time of sunrise, suggesting a large movement taking place in the universe. Ayurveda thus concludes that these hours are the best time of day for one to wake up and begin their movement. Kapha exists more between the hours of 6 and 10 AM and PM. To keep the body in harmony with the daily hours, one should perform the daily regimens. These activities include brushing the teeth, excreting wastes, bathing, etc. Finally, the hours of 10 to 2 AM and PM are the pitta hours of the day. Because pitta is the energy that digests food, it is advised to eat major meals during these times. While these times are not always exact, they offer a general reference as to what period of the day each activity should be carried out. Different times of the year suggest different activities at different times of the day. For

example, daylight savings time has an effect on the time of sunrise and therefore the best time for an individual to wake up is shifted.

In addition to being predominant at various times of the day, the three doshas have been associated with specific periods of the human life. Kapha is thought to be the dosha involved with the first third of one's life, from birth until thirty. Between the ages of thirty one to sixty is thought to be of pitta predominance, and between sixty one until death is the time frame where vata is strongest. The diseases that tend to be common to each age group tend to be vitiated by the dosha for the respective stage in life. A particular disease is not caused by a change in just one dosha, but the one mentioned is the primary force which then involves the other two doshas. Thus, the stages of life highlight the main dosha involved in vitiating the diseases common to it. While the chief dosha will be discussed, its effect on the other doshas will sometimes be mentioned in order to create a better understanding of how the disease is produced.

During the first thirty years, diseases such as chicken pox, asthma, and cold are prevalent. Chicken pox is caused by a virus entering the lungs, an organ filled by kapha. Pitta is also highly involved as the virus transmits throughout the body in blood. Asthma is the result of the lack of moisture in the lungs, resulting in dryness, or vata. Usually a disease is associated with the dosha that has been increased. However, for asthma, the kapha within the lungs has been removed. As a result, a wheezing sound is experienced while breathing. The common cold is a result of kapha exiting the linings of channels and building up in the middle of the passageway, a process that will be later explained.

The mucus that is coughed up from the throat is the excess kapha that is blocking the path of air, food, or water.

Diseases common to middle aged people include high blood pressure, heart disease, and bronchitis. Pitta is the dosha most involved with blood. The increase of pitta's fire melts the kapha which serves as a lubricant in the linings. The melted kapha restricts the amount of area the blood has to flow through the channels. With less area for the blood to flow, the heart has to pump harder thus leading to an increase in blood pressure and a gateway for heart disease. Bronchitis is also a major disease affecting middle aged smokers. As mentioned before, pitta is the fire in the body, and heat is the primary cause of inflammation. Bronchitis is the inflammation of the bronchial tube linings. Their expansion blocks the transport of air, thus effecting vata also.

Vata is the dosha most responsible for the last third of one's life. During these years, common diseases include arthritis, osteoporosis, and Alzheimer's disease. While arthritis and osteoporosis begin to develop in the body during the middle age period, they are not often diagnosed in these years because their symptoms are not severe. It is only in the last third of one's life that these two diseases have the greatest effect on the body. Arthritis and osteoporosis are both due to problems among bones, which are highly vata concentrated areas. Arthritis results from increased dryness (or vata) between the bones, and osteoporosis is the lack of nutrient storage within the bones. Moreover, Alzheimer's disease is the loss of memory in the brain; one of vata's five classifications, as mentioned before, is to provide intellect, specifically in the form of memory.

Modern medicine and Ayurveda explain the observed trends in diseases common to certain age groups. Allopathy provides a physiological rationalization of the body's susceptibility to particular diseases as it develops. For instance, it may reason that a particular cytokine's concentration increases over time, and this cytokine has been found to promote inflammation[1]. Alternatively, Ayurveda's explanation of the diseases is in terms of forces within the body. It would associate the inflammation as an effect of pitta's fire increasing the intensity of heat. The heat melts the kapha within the linings and space fills the area kapha once occupied. After knowing both these explanations, one has a greater understanding of the nature of a disease. With this knowledge, a physician can more effectively prescribe a treatment from two different perspectives.

DHATUS

Understanding the nature of a disease from the Ayurvedic perspective requires more than knowledge of the three doshas. The way in which the internal body is perceived is completely different from that of modern medicine. Modern medicine describes the body as a network of interconnected systems. They each affect one another—the nervous system affects the skeletal system which affects the circulatory system and so on. The physiology of the human body is viewed from a different perspective in Ayurveda. Rather than having specific, differentiated systems, the body consists of a series of channels, or srotas. These channels flow through every part of the body to perform the necessary functions. The seven srotas contain the seven dhatus, which can be viewed as tissue layers (Figure 4). Ayurveda classifies its "systems", the seven dhatus, as rasa, raktha, mamsa, medas, asthi, majja, and sukra. When food is consumed, it is converted into a product that is one of the seven tissues.

There are various theories on how food nourishes the dhatus. The first, and most accepted hypothesis, states that one dhatu completely converts to the next, similar to how milk is transformed to yogurt. Just as yogurt cannot be converted back to milk this dhatu transformation is unidirectional. Another theory suggests that as the dhatu is transported within the body, it supplies the nutrients for the next dhatu in each respective area; a concept similar to following a concentration gradient. For example, if a certain area is lacking sodium, the sodium in the interstitial fluid will go directly to it. The third theory says that one dhatu serves as an activating signal for the formation of the next. In modern medicine, this is comparable to the effect of hormones as signals. Each dhatu has

accessory tissues and waste products, with which it is associated. Every tissue layer also has the property of one of the three doshas.

Rasa is most commonly translated to plasma, but this is merely an English structure of the function described in Sanskrit. Rasa can also be in the form of lymph and chyme. Rasa has the property of nourishing, therefore its accessory tissues are breast milk and menstrual fluid. Breast milk is the main source of nutrition for babies as this is the only thing they consume in the first part of their lives. Rasa's waste product is mucus. The most common time mucus is produced is when one suffers from cough and cold; it is a buildup of substances that are not providing the body with nourishment and need to be quickly removed. Because it serves to nourish the body, and due to the thick qualities of its associated tissues, rasa is associated with the kapha dosha.

Raktha translates to the structure of blood but serves the purpose of invigoration, or providing life. When blood stops circulating in the body, one's existence ceases. Wherever raktha is found, rasa is also present; one of blood's three major components is plasma, or rasa. Raktha can be found in the veins, and tendons. Its waste product is bile, a digestive acid produced in the liver and stored in the gallbladder. Jaundice is a disease that results when bile is not properly excreted out of the blood. The excess bile causes the yellow coloration within the skin. Ayurveda and modern medicine both consider blood to be produced by the liver. The dosha most closely related to blood is pitta, the dosha of heat and fire. Often when a person is angry (a result of pitta's flaring heat and fire), he or she is said to have boiling blood; thus pitta is the predominant dosha here.

Mamsa has the responsibility of covering, and it can cover the skeleton, the internal organs, or even other tissues. Modern medicine finds this quality mainly in muscles but it can also be found in ligaments and the six layers of skin as they also cover the bones. Where there is mamsa, raktha and rasa are also present. One may wonder how muscle tissue can exist before bone since bone is wrapped within the muscles. There is no area in the body where bone exists without muscle, but there are muscles that exist without bones. A couple examples include the heart and tongue. Both contain the first two dhatus but do not need bones to function. Mamsa produces all the waste that can be found within the srotas and is associated with kapha.

Medas is the dhatu that modern medicine calls fat and has the action of lubrication and providing unctuousness, qualities highly associated with kapha. Fat tissue wraps around muscle and helps keep the body warm. It can be found in the omentum which is attached to the stomach. While fat serves to keep heat within the body, sweat is the body's attempt to cool it. During exercise, one secretes sweat as a result of breaking down medas therefore sweat is its waste product. Together, medas and sweat regulate body temperature. Medas exists with mamsa, raktha, and rasa. Slowly a trend from broad to more specific can be observed in the order of the dhatus. Medas is the most inclusive dhatu described thus far, and is on the exterior of all the previous dhatus. This trend will now reverse as the tissues will work their way back inward to the body (Figure 4).

Medas gives rise to asthi which serves to support the body, mentally and physically and give it a particular shape. Skeletal bones most accurately serve the

function of supporting the body physically. It is also associated with teeth which provide structure within the mouth—when people are missing several teeth, their lips tend to curl in as there is no object providing proper configuration. Asthi forms a basis upon which the previously mentioned dhatus are built. Therefore, it displays internal features on the periphery. For example, body hair and nails are examples of asthi's waste products. Wherever there is bone, medas, mamsa, raktha, and rasa will also be present. Bones provide the body with mobility, therefore vata is associated with them.

Within asthi is majja, or any matter that is completely surrounded by bone. Its primary purpose is asthipurana or "bone filling". Kapha is the only dosha containing earth, thus it is the dosha involved with majja. Some translate majja to bone marrow, but it is beyond this. In addition to bone marrow, majja includes the brain and spinal chord, which are held within the skull and spine respectively. The associated tissue involved with majja is head hair. Majja's waste products are lachrymal secretions such as those of the eyes and skin.

Sukra is the final dhatu and has the purpose of reproduction. Therefore, it is composed of the male and female sexual fluids. Sukra has no associated tissues or waste products. Kapha is the dosha most involved with sukra since it is thick and unctuous in nature. This final dhatu is the unification of ahamkara with nutrients from food. Ahamkara is the essence of self, and it develops during conception. The culmination of the food's journey in the body is to the final endpoint of providing life to another human. Only after establishing the first six dhatus does food reach sukra. Theoretically, it is the

outermost srota since it is the last. However, the change in outward physical direction after medas suggests that sukra is in fact an inner bodily fluid similar to rasa (Figure 4).

With the knowledge of the dhatus themselves, one can understand the process by which they are created. All matter in the body exists because of the consumption of food. A person who is malnourished loses weight; the matter that was once part of his or her body is gone. The seven dhatus are tissues within the body that are a result of the transformation of food. Ultimately, food is composed of a combination of space, air, fire, water, and earth which also constitute the three doshas. In turn, one of the three doshas is associated with each dhatu. Ayurveda views such chain effect as the pathway by which the body functions.

RASAS

In modern science, food is classified by its health value—the amount of lipids, carbohydrates, or proteins that it provides. A physician bases a large amount of his or her lifestyle suggestions for a patient on a new arrangement of these nutrients. In Ayurveda, food is determined by the taste(s) it offers. Each taste has a quality which is determined by the combination of five elements that compose it. Based on these qualities, the corresponding dosha is activated which leads to the dhatu formation. The six tastes, or rasas, are sweet, sour, salty, pungent, bitter, and astringent (Table 5).

When the word rasa is used, it is not necessarily that which is perceived by the tongue. Since food is medicine, rasa refers to the body's perception of it at any point before digestion. Every taste has an energy which is either hot or cold. The energy, or virya, that the taste emits is determined during digestion. Finally, food will have a post digestive effect, or vipaka. While pre-digestion contains six tastes, post-digestion only has three. They are sweet, sour, and pungent. Before digestion, food is still in its original form, at least with respect to its structure after digestion. Therefore, while one may think that the tastes before and after digestion should remain the same, it must be understood that the tastes are not changing. Rather, the tastes condense from six to three; the three post-digestive tastes share qualities with one of the three doshas.

Each taste is composed of a different combination of two of the five elements. Sweet is the taste composed of earth and water, the same combination of elements composing the kapha dosha. Therefore foods that are sweet, increase kapha and decrease vata and pitta. Since kapha is associated with five of the seven dhatus eating more sweets

will reinforce the corresponding dhatus. Sweet foods have the cooling, oily, and dense properties. This taste provides a cold energy during digestion because it requires extra energy in order for it to be completely broken down. In modern terms, its enthalpy is positive since the energy put into the system exceeds that which is released. Sweet foods have a post-digestive effect of sweet itself. When eaten in the right amounts, sweet foods are satisfactory to the body. When one eats sweets, his or her mind and body are satisfied since these foods tend to stick to the insides of the mouth. Comfort foods tend to be sweet for this reason—they provide temporary satisfaction. When there is an overindulgence of sweet foods, Ayurveda claims that greed is the resulting emotion. After eating one sweet, an individual usually has the desire for more, to feel that temporary satisfaction again. Excess consumption of sweet foods results in kapha-originating diseases such as obesity, diabetes, and lethargy.

Sour is the rasa made of earth and fire. Since earth and fire also are found in kapha and pitta, an increase in sour foods increases these doshas. Sour foods tend to be hot, oily, and dense. They produce hot energy during digestion and remain sour after digestion. Sour foods offer a strong taste; when one indulges in sour candy his or her face usually displays discomfort at first. After the body adjusts to the shocking taste, it is refreshed. Sour foods also strengthen the digestive system by aiding the elimination process. The primary emotion produced by foods with this taste is envy. Because sour strengthens digestion, it increases one's appetite, both physically and mentally. Mental hunger forces one with a greater need to fulfill his or her desires, and if his or her desires cannot be completed, jealousy of others' possessions results. Too much consumption of

sour foods can lead to loss of strength, swelling, burning sensations, and looseness of body tissues.

The salty rasa is a combination of water and fire, elements also found within kapha and pitta. While many properties associated with sour and salty will be similar, they will differ in the qualities provided by earth and water respectively. For example, salty foods also increase kapha and pitta while decreasing vata. In addition, they are hot, oily, and dense, as are sour foods. However, the element of water gives salty foods the capacity to remove rigidity in the srotas and increase digestion. Water is a rejuvenating substance, therefore salty foods help cleanse the body. In modern medicine, an increase in salt (sodium) results in water retention in the kidneys. As a result, Ayurveda predicts looseness in the tissues. Salty foods produce a hot energy and are sweet after digestion. The transformation from salty to sweet occurs because of the sweet rasa's nourishing and supportive nature. Salt is a condiment added to enhance any food's taste. It strengthens the effect of the other tastes—even things that are sweet usually contain salt. Salt is also used frequently as a natural preservative. Mentally, it preserves one's appreciation for life. However, too much salt causes inflammation, more susceptibility to bleeding, wrinkling of the skin, and baldness.

Bitter foods contain air and space, consequently they increase vata while decreasing kapha and pitta. Because of vata's influence, these foods tend to be cool, dry, and light. Bitter foods thus have a cold energy during digestion and result in pungence afterwards. They do not remain as bitter, but transform to pungent. Bitterness tends to make one very dissatisfied which can lead to frustration. Physically, bitter foods spread

air throughout narrow srotas thus dilating them but also can constrict srotas that are too wide. Similarly, bitter foods have the power to change the effects of the other rasas on the body. Bitter is the only rasa to produce such homeostatic effects in the body. Excessive consumption of bitter foods results in vata related diseases such as stiffness and numbness while also diminishing the dhatus.

Foods that are pungent in nature are made of fire and air. These elements also compose pitta and vata, therefore pungent foods increase these two doshas while decreasing kapha. A good example of a pungent food is chili pepper which is hot, light, and dry. Pungent foods provide a very hot energy, and ultimately remain pungent even after digestion. The strong nature of pungent foods provided by fire allows them to cleanse the body of its wastes. The air component helps dry kapha substances such as fat, and milk. Pungent foods share pitta's penetrating nature, thus when eaten in excess, they can cause thirst, tremors, fainting, weakening of the body, and drying of semen. Mentally, pungent foods lead to easily excitable personalities which are stimulated by their passion. The hot fire transfers to the body, making the individual more stimulated. However, too much intake of pungent foods causes the fire to flare resulting in anger. As a result, kapha, the dosha portraying self-gratification, is decreased due to the anger and annoyance.

Finally, air and earth combine to form the astringent rasa. Similar to bitterness, astringent is cool, dry, and light and also increases vata while lowering pitta and kapha. During digestion, it releases a cold energy. Astringent foods become pungent after digestion as observed with pungent and bitter foods which also contained the air element.

Its acidic nature allows it to cleanse the body of all wastes and heal ulcers or other wounds. As a result, it lessens the amount of secretions produced. While pungent foods result in extroversion, astringent foods cause introversion. Astringent foods are only capable of constricting therefore are beneficial during times when the srotas are dilated. Because it decreases the channels through which nutrients flow, astringent foods are capable of malnourishment. Excessive intake of these foods can result in vata caused diseases such as heart pains, thirst, constipation, and dryness of the body.

Both Eastern and Western philosophies view food as medicine, because it nourishes the body with the necessary nutrients. However, they differ in their viewpoints of what nutrients are. Allopathy claims that macromolecules (proteins, carbohydrates, lipids, etc.) nourish the body while Ayurveda suggests that each tastes' post-digestion factor is responsible (sweet, sour, or pungent) for building tissues within the body. Though their approaches differ, the body is ultimately nourished by the food one consumes.

Ayurveda states that taste is merely an individual's perception of food, hence it is perceived by each individual in a different way. According to Ayurveda, the condition of the sensory nerves on the tongue determines how the mind responds to consumed food. For example, orange juice will taste much different after one has just brushed his or her teeth than it does after one has eaten a slice of toast. The same glass of orange juice is perceived in two different ways by the body and mind. Furthermore, when one is ill, his or her sense of taste is extremely deviated. Therefore, the effect of food differs according to the state of an individual's body upon consumption. Western medicine divides the

tongue into specific regions. It claims that each structural area is responsible for providing the mind with a particular taste. Allopathy also recognizes the impact of the sight of food and one's genetic affinity to certain foods when one is contemplating what to eat. Again we see the division between structure and function as the basis for reasoning among Ayurveda and allopathy.

AGNI

The process by which food nourishes the body differs between allopathic and Ayurvedic medicine. Allopathy states that one's metabolism is in charge of breaking down food and converting it to energy. Ayurveda describes the existence of thirteen different agnis, or fires. They are placed in categories according to their function. The first is the main fire that is responsible for digestion (jataragni). The next five are responsible for producing the five elements—space, air, fire, water, and earth (pancha maha bhuta agni). The last seven correlate to one of the dhatus (dhatu agni). Furthermore, agni can be of four types based on which dosha it is associated (Figure 5). While there are only three doshas, the fourth agni represents the ideal fire that should exist in a healthy individual.

When agni is classified by its function, jataragni is the primary fire that converts food into material that will transfer to one of the other twelve agnis. All food must first go through jataragni. This main agni is responsible for three main stages of digestion. First, it breaks down food within the stomach. Next, it divides the broken down material between wanted and unwanted. Lastly, it sends the unwanted material to the small and large intestines for excretion. The agni responsible for processing the five elements converts these elements into resources the body can use. These five agnis are located within the tissues in order to assure that elements are transformed to the appropriate tissue. For example, the body requires water but does not use it in the form that is consumed. A specific agni is needed to produce lymph, blood, and other intracellular fluid. Next, there is a dhatu agni responsible for creating the seven dhatus. Each agni is

located in a dhatu and performs the necessary actions in order to create one dhatu from its preceding form. For example, there is one particular agni in charge of converting rasa to rakta. Then, a different agni will transform the rakta into mamsa.

Allopathy describes different rates of metabolism which are comparable to the rates at which the agni of each dosha performs its function. An individual with a fast metabolism is generally skinnier than one with a slow metabolism. Ayurveda suggests that this is the difference between the agni within a pitta and kapha person, tikshagni and mandhagni, respectively. One having vishamagni has an agni that is affected by vata. Thus, he or she will have irregular and imbalanced digestion. Those with tikshagni digest food very quickly, so fast that these people are usually always thirsty and hungry. People with mandhagni have slow digestion marked by a feeling of heaviness in the body. Finally, samagni is the ideal state of digestion where everything is in normalcy among the three doshas. Samagni is within the healthiest individuals.

AMA AND WASTE PRODUCTS

It is when one's agni deviates from its normalcy in samagni that disease is formed. In Ayurveda, disease is created when agni cannot effectively digest food. The lack of transformation of food into the bhutas (elements) or dhatus (tissues) causes undigested food to accumulate in the system. Ama is the term referring to undigested food that remains in the body. When the concentration of undigested food increases without being converted to the appropriate form to be used by the body, its accumulation results in disease; disease is a result of ama gathering in the body. The modern eye may view this explanation as too simple to explain the complexities of disease. However, ama is an extremely inclusive term which is the basis of vitiations in the doshas, dhatus, agni, etc. Each of these aspects of the body is interdependent; a change in one will affect another. Because food is medicine, changes in the body eventually trace back to food, and how, if at all, it is processed.

While the concept of ama is one, it can be created in five different ways. The first way, which has already been discussed is ama formed from a weak digestive fire, or jataragni. If jataragni is not strong enough, or is working inefficiently, the food will have negative effects from the start. Another way in which it is produced is from weak dhatu agnis. If food has been properly converted to rasa but then faces a digestive problem, it will stay in the form of rasa without every producing rakta. In this circumstance, the rasa will be the cause of ama. Another way in which ama is formed is when waste products accumulate from a lack of efficient excretion. The large intestines are responsible for eliminating waste, if it is not properly emptied, a block forms and forces the contents of

the stomach to remain there—the full intestine has no room to receive any contents from the stomach. Therefore, the food in the stomach causes the ama. Ama is also constructed when the forces of the doshas clash and cause disturbance to the body's digestive rhythm. Lastly, the consumption of unsanitary foods will result in ama. Proper hygiene must be followed for these reasons in the form of properly cooked meat, carefully washed fruits and vegetables, and other such acts.

Ama forms as a result of toxins produced by the body from the food an individual consumes. Disease results when this ama continuously builds up within the internal organs. These toxins can be most simply translated to undigested food. In addition, the human body has a way of deciphering wastes from nutrients upon digesting food. Ama can be physically witnessed upon observation of one's wastes. The wastes it creates are excreted regularly and with the appropriate qualities when an individual is healthy. Ayurveda describes the three waste products the body excretes as fecal matter, urine, and sweat. For each waste product, it explains in what manner they should be excreted, their physical features upon exiting a healthy body, and the consequence of when they are not properly emitted from the body.

When food enters the body, the digestive system divides it into wanted and unwanted food. The wanted food is transformed into dhatus in the methods explained earlier. The unwanted material is sent to the intestines for excretion. It is the intestine's responsibility to convert the unwanted matter into appropriate excretory matter. If this matter is not excreted and instead builds up inside the intestines, germs will form and alter its normal properties. In addition, its accumulation will eventually fill the intestines

and thus cause food consumed later to stay in the stomach. To avoid the mentioned problems from excess fecal matter, it should be excreted regularly and in its proper form. Fecal matter can take the form of hard, soft, or moderate according to Ayurveda. When it is hard, it is due to the increase of vata. The vata vitiation causes the irregularity in its excretion as well as the roughness in texture. Fecal matter can also be soft, usually in the form of diarrhea. This is due to an overactive digestive fire—a predominance of pitta. Pitta's increase causes the stools to be liquid in form and often a person feels dehydrated under these circumstances. Finally, moderate fecal matter is due to kapha. In their normalcy, stools should be neither hard nor loose, but a median between these. Furthermore, they should be excreted regularly. Ayurveda perceives the properties of stools to be representative of an individual's strength and health. Kapha is the dosha representing strength therefore proper stools suggest a healthy, strong, body.

Urine is also one of the body's waste products, particularly for the rakta dhatu. Urine has three components, the most important one being wastes extracted from the bloodstream, in addition to electrolytes and water. The wastes placed into the bloodstream were sent from various cells that collected it. Blood travels to all parts of the body since it provides nourishment, therefore it gathers all the ama from the body. After collecting the wastes, it goes to the kidneys which produce the urine in order to excrete the wastes. Urine is representative of the food one consumes in addition to waste from the cells. Since water is the most abundant component, a healthy individual should have clear urine. The more yellow urine is, the more waste produced by the body, and the less healthy the individual. When urine is suppressed and remains in the body, the

excess moisture forces the muscles to become flaccid. In addition, the surplus of uric acid collects in the tract. Ayurveda believes hardening of the collected acid results in kidney stones.

Sweat is the final waste product excreted by the body. As mentioned before, it is medas' (fat tissue's) waste. The purpose of sweat is to help maintain body temperature. When sweat is secreted through the skin's pores, it is to produce a cooling sensation on the body. This is the reason why one sweats when outside on a sunny day. Sweat is the body's response to the external heat. Those with more medas are more likely to retain their sweat since they have more tissue blocking the pores. Sweat's accumulation in the body will result in skin disease according to Ayurveda.

PANCHAKARMA

The accumulation of ama, contributed by the various factors discussed, eventually leads to disease. After understanding Ayurveda's perspective on the human body, its origins, and the manifestation of disease, one can comprehend its methods of treatment. As expected, Ayurvedic treatment is much different to that of any other type of medicine. This medical practice dates back thousands of years, therefore its treatment is not as technology based as modern medicine. Rather, Ayurvedic medicine is completely natural, and its treatment is primarily noninvasive. While there are surgical operations performed in Ayurveda, they are very basic. Modern science relies heavily upon pain killers, especially in times of surgery. Since there are no pain killers in Ayurveda, only so much surgical treatment can be provided. The treatment therapies may appear to be somewhat crude, but again it only appears this way because of Western medicine's dependence on the use of equipment and machinery.

In order to understand Ayurvedic treatment, one must first be informed of the 4 main classifications of a disease. First, a disease can either be sadhya or asadhya—fully curable or merely manageable. An example of a sadhya disease is chicken pox and an asadhya disease is diabetes, where a patient must be on medication forever. Furthermore, there are two subclasses within each. A sadhya disease can either be shamana or shodana. Shamana diseases only require a patient to be on medication for a very short period of time and make slight lifestyle changes; the patient will ultimately return to normal health. The common cold is a shamana disease. Shodana diseases require prolonged medication in addition to a change in lifestyle in order to prevent the disease

from reoccurring. An example of a shodana disease is malaria. Asadhya diseases can be yapyaha or anupakrama. Yapyaha diseases are only manageable, and require a dramatic lifestyle change and medication for the rest of the patient's life. An example of this is Alzheimer's disease where the patient suffers for the rest of their life but the disease is not the cause of death. Finally, when there is absolutely no chance of survival from a disease, it is said to be anupakrama. These fatal diseases are the most depleting in nature. An example is leukemia where doctors can only manage to prolong one's life.

Treatment can only be provided for those diseases that are curable, or sadhya diseases. Thus, treatments can be of either shaman or shodhan types. Shaman is the use of herbal medications to provide instant remedy. The West is more familiar with this form of treatment as it is quite common among modern practitioners. Shaman is used in instances where the doshas are slightly vitiated and can be easily placed back into their normalcy. Cases dealt with in the Outpatient Department fall under the shaman category. While Ayurvedic medicines are completely herbal, not all herbal medicines are Ayurvedic. Those that are Ayurvedic follow the principles of balancing the doshas and restoring harmony in the patient's body. Shodhan is a more long term approach to chronic illnesses. It involves detoxification of the body which is performed by Panchakarma, or "five treatments". Treatment of shodhan diseases resembles an Ayurvedic text which writes, "*Remove the cause. Purify, to eliminate excess doshas. Balance the doshas and rekindle the digestive fire. Rejuvenate, to rebuild the organism.*"

When a patient comes to an Ayurvedic hospital for a shodhan disease, typical treatment occurs in three parts, as defined by the quotation. The first part includes a

particular form of massage done daily in addition to oral medication. The massage portion is done to further vitiate the doshas, thus the patient is likely to be quite vulnerable to diseases; he or she is not permitted to leave the hospital room for any reason. A patient may be prescribed more than one type of massage; under these circumstances he or she will switch the form after the prescribed time. This is the physician's first attempt at locating, and removing the cause. The climatic portion is when Panchakarma treatment is performed. Panchakarma is usually performed during the last quarter of the patient's stay. His or her body is detoxified from the aggravated doshas. Finally, during the few days following Panchakarma, the patient restores the strength in his or her body and completes the final stages of massage and oral medication. Susruta and Charaka Samhita differ in their forms of Panchakarma, primarily because Susruta represents the school of surgeons thus has a technique called rakthamokshana which is a slightly invasive method. Susruta's five forms of Panchakarma include vamana, virechana, basti, nasya and rakthamokshana. In Charaka Samhita, there are two forms of basti, but rakthamokshana is not included. Its five Panchakarma treatments are vamana, virechana, asthapana basti, anuvasana basti, and nasya. The Panchakarma as discussed in Susruta will be described.

Vamana is emesis, or therapeutic nausea. It is used for diseases in which kapha is predominant as it helps clear up the channels that have been blocked by kapha. Allopathic examples of such circumstances include of bronchitis, asthma, and chronic cold. Virechana is purgation, a form of therapeutic laxative. It is largely involved with excretion of wastes from the body, thus virechana helps eliminate pitta vitiated diseases

such as acne, jaundice, and skin rashes. Basti, or enema, is the most important of the five as it controls vata. It involves the placement of herbal concoctions into the rectum in circumstances such as kidney stones, heart pain, backache, arthritis, constipation, and muscle spasms. In Ayurveda, the large intestine is viewed as the most influential organ involved with the causation of disease. Thus, enema's influence on the large intestine increases its importance. The remaining two methods of detoxification are the only forms of Panchakarma to last more than one day. During nasya, or nasal treatment, a patient first undergoes fomentation to melt the excessive kapha located in the region above the clavicle. Then, drops of medicated oil are squeezed into each nostril, while the patient is lying down with his or her head stretched back. Slowly the patient will feel drainage which he or she will then remove through the mouth. It is done for more than one day in order to routinely clear the blockage. Nasya is usually given to patients with migraine headaches, sinus congestion, and eye problems. Finally, rakthamokshana is bloodletting therapy which can take many forms. One common type is using a leech to suck the diseased blood. The physician first cleans the affected skin and then pricks it with a needle until a small amount of blood has been drawn. After this, a leech is placed on the skin and remains there until the physician feels a sufficient amount of blood has been removed. This technique is also performed over a series of days. Rakthamokshana is performed on patients suffering from circulatory disorders, eczema, rashes, and leukoderma.

CONCLUSION

The complex philosophy of Ayurvedic medicine frames itself upon the three forces of nature, vata, pitta, and kapha. An understanding of the balance of these forces in nature and the human body is the first step in conceptualizing how to maintain one's health. Moreover, an imbalance in the three components results in disease. The holistic approach in treating diseases in Ayurveda involves an in depth analysis of the patient's constitution and daily regimens. Ayurvedic treatment stems beyond medicine; it includes the diet one should have, the specific taste(s) one should eat more or less of, what type of exercise one should perform, the time of the day it should be done, etc. Furthermore, Ayurveda's holistic approach emphasizes the individual patient, not the disease. The concept of patient-centered medicine is the goal of most, if not all, healthcare practitioners. Ayurveda's unique approach makes patient-centered medicine easily attainable for practitioners.

Ayurveda portrays medicine as a healing art by taking an abstract approach to examining the human body and disease. This allows for various interpretations of its theoretical foundation. It incorporates unique, abstract paradigms into the practice of medicine. Typically, an Ayurvedic practitioner views the human body and nature as one. Such knowledge can be used to analyze patients and healthy individuals. As mentioned earlier, medical practices are formed from the resources available to a society. Ayurvedic practices require no use of technology or machinery which makes it more easily applicable today, to multiple societies around the world.

The analysis of a patient from different dimensions can be easily applied to other forms of medicine. For example, allopathic medicine, the most common form practiced in the West, can adopt some basic Ayurvedic principles to have a better understanding of the patient. When discussing the patient's habits and lifestyle routines, a physician can perceive what the patient says in terms of a balanced harmony of all the functions in the patient's body. This can provide a more structured analysis which may help when devising a treatment plan for minor ailments.

Ayurvedic medicine is a philosophy that can thus be applied in multiple aspects to various schools of treatment. Though not widely popular, this is no reflection of its effectiveness. Its complex theory and detailed explanations were developed on successful observations. This paper illustrated the various dimensions of Ayurveda, its history, philosophy, and methods of treatment. Given the opportunity, it has the potential to greatly contribute to society and other schools of medicine.

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Appendix A: Figures

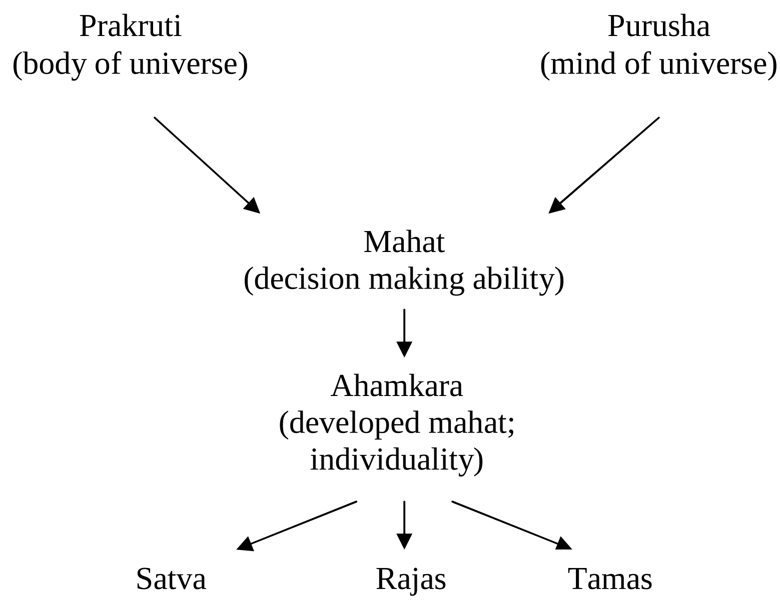


Figure 1. Prakruti and Purusha are respectively the body and mind of the universe. The combination of mind and body forms the ability to make choices; these choices are what separate individuals, and result in the development of satva, rajas, and tamas.

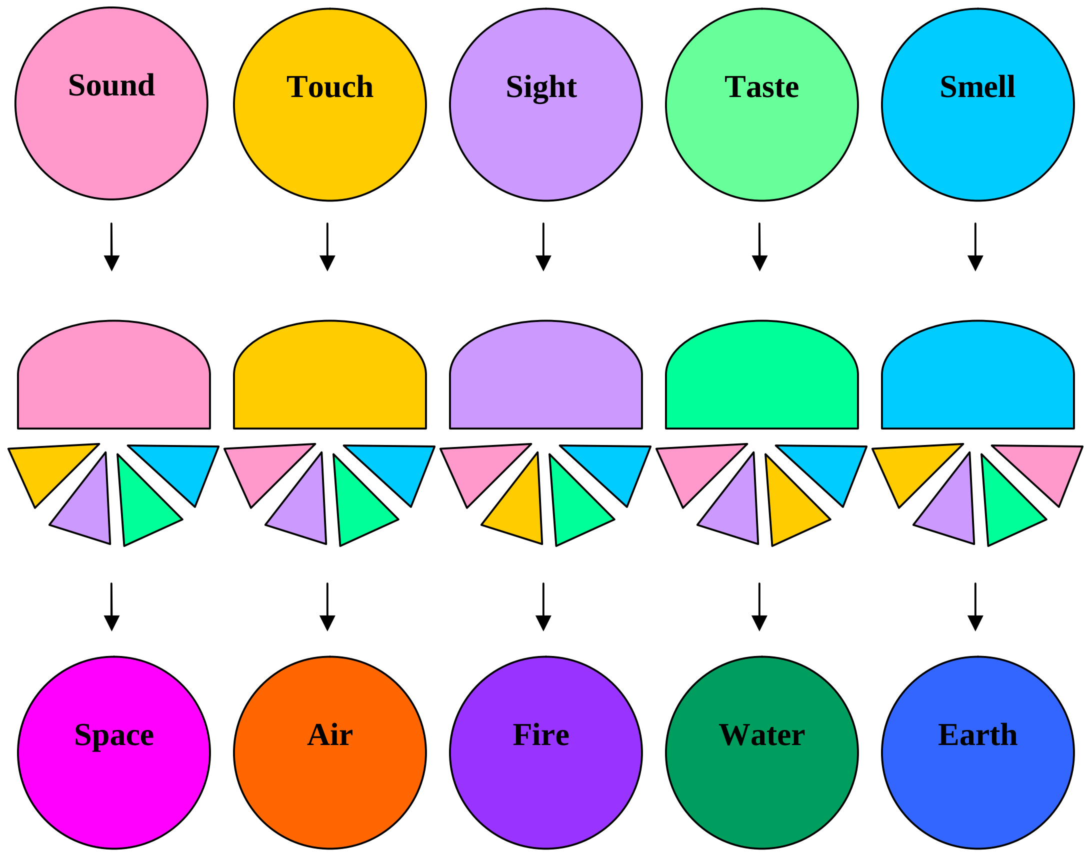


Figure 2. This diagram displays the origins of the five senses and how they combine to create the Pancha Maha Bhutas. Each of the Pancha Maha Bhutas contains half of one of its corresponding five senses, and one fourth of each of the other senses. These proportions are merely for the purpose of providing an example.

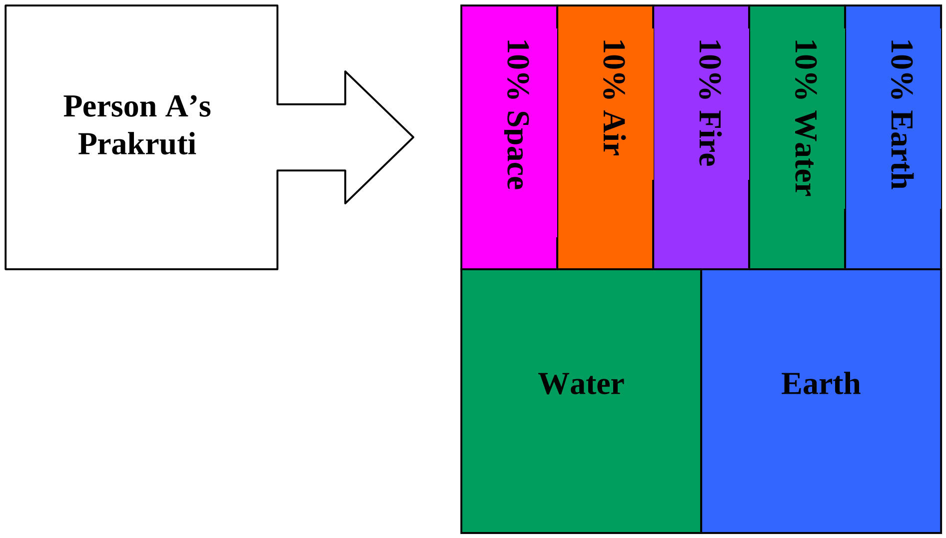


Figure 3. Person A's constitution in terms of hypothetical percentages of the Pancha Maha Bhutas is represented here. Water and earth constitute half of the individual's physical body. The 10% of each other dosha is what distinguishes individuals as they are in different proportions for everyone.

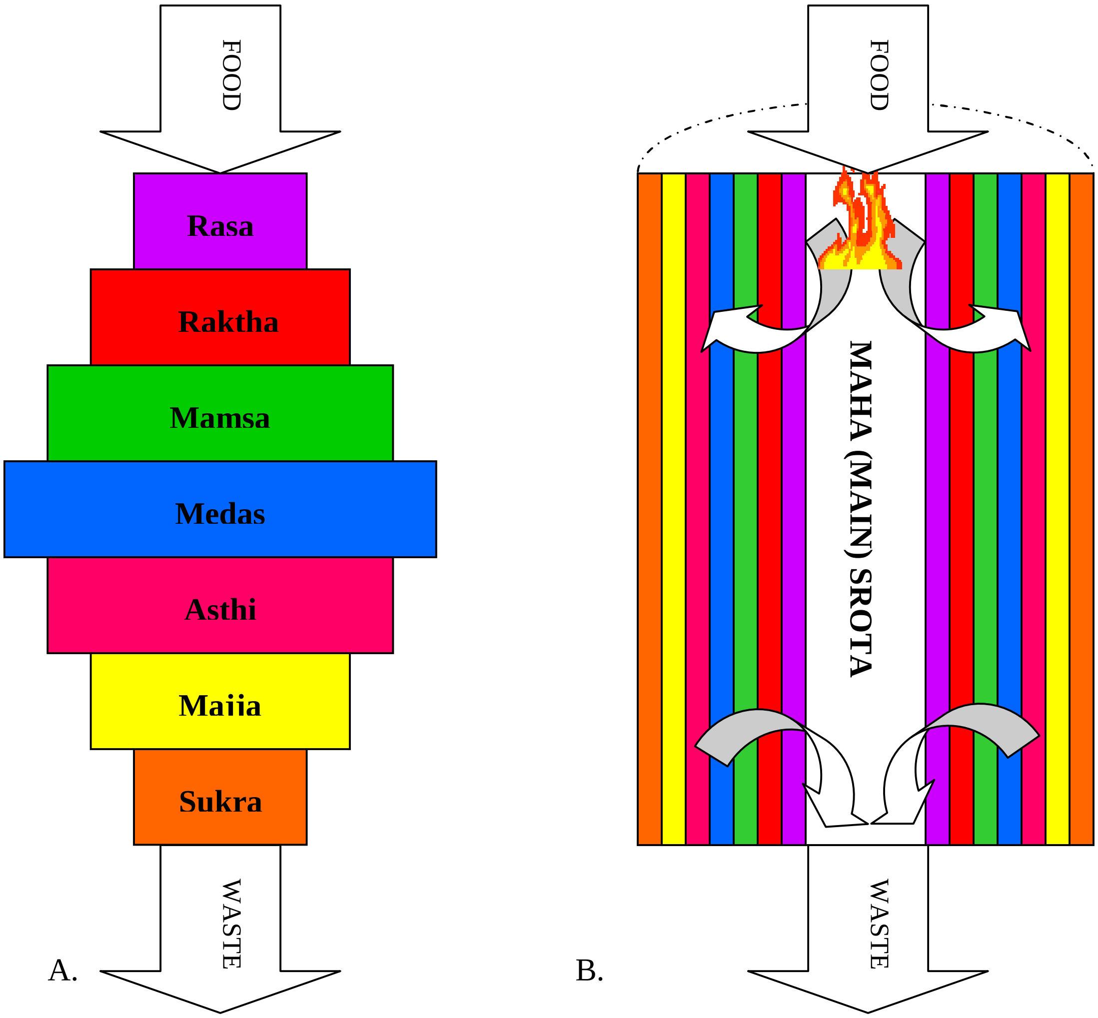


Figure 4. This figure represents the in-out-in relation of the seven dhatus as they are physically arranged in the body. The most widely accepted theory of dhatu nourishment states that food is first digested in the Maha Srota and then progresses to the dhatus following a downward direction in A and an outward direction in B.

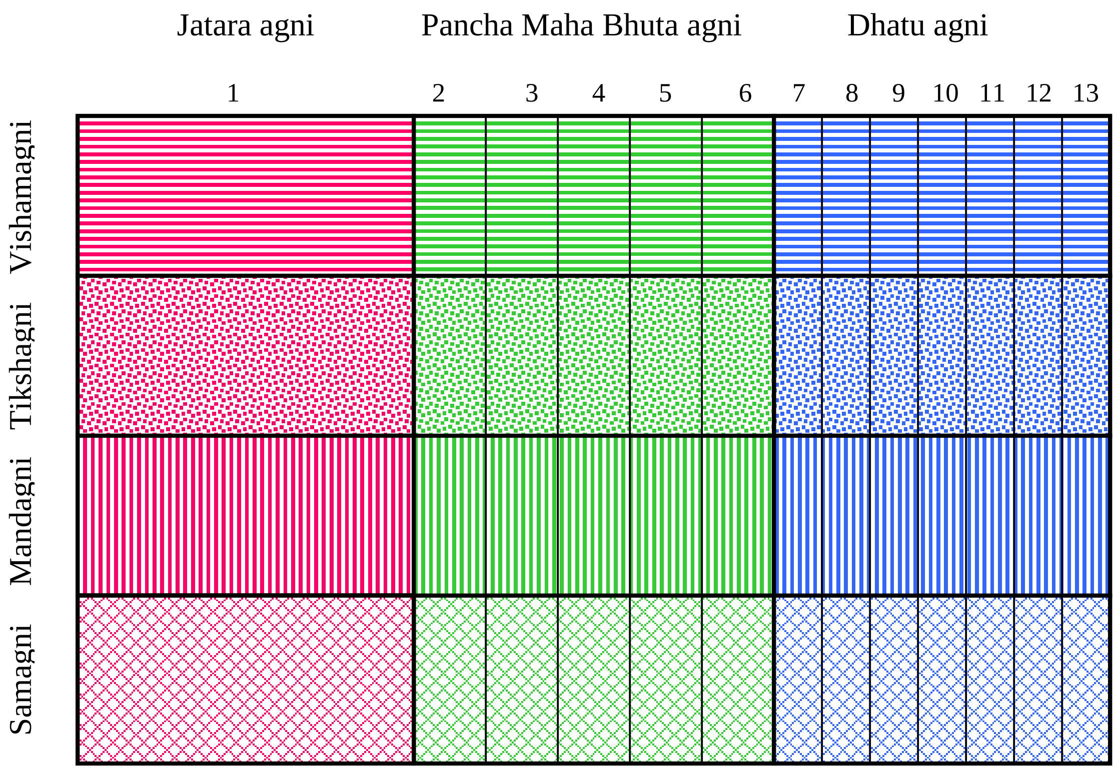


Figure 5. Agni's classifications by function and by dosha.

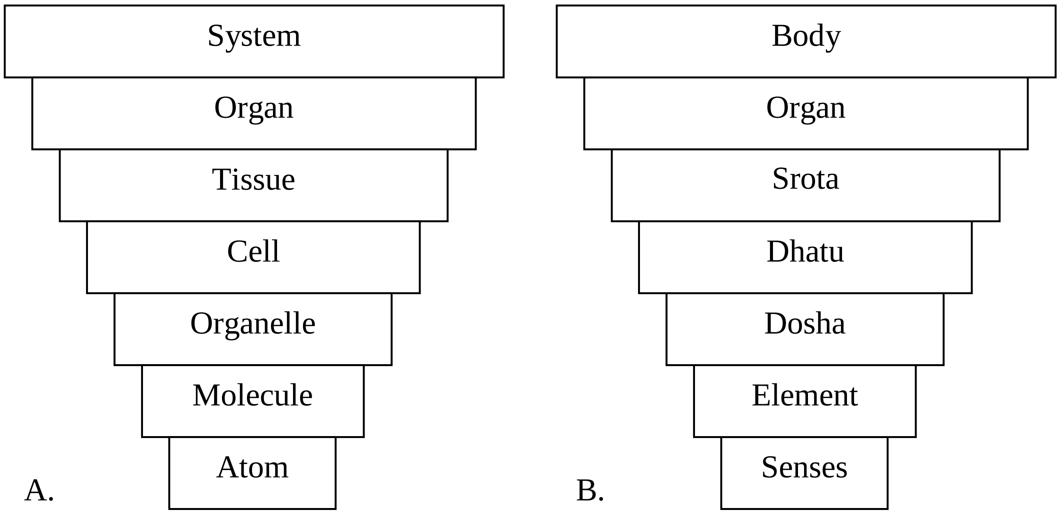


Figure 6. Comparison of Allopathic (A) and Ayurvedic (B) perspectives of the body.

<u>Appendix B: Tables</u>

Table 1. The characteristics of different Ayurvedic texts.

Type	Description
Charaka Samhita	School of Physicians; discusses physiological, anatomical and pathogenic interpretation of disease
Susruta Samhita	School of Surgeons; describes surgical techniques for amputations, wounds, etc.
Ashtanga Hridayam	compilation of Charaka and Susruta Samhita

Table 2. A list of each area of study in Ayurveda and the field within allopathic medicine with which it is most comparable.

	Type	Description
1	Kayachikitsa	General Medicine
2	Balachikitsa	Pediatrics
3	Grahachikitsa	Psychiatry
4	Urdvangachikitsa	Ear, Nose, Throat
5	Shalyachikitsa	Clearing Passageways
6	Agada tantra chikitsa	Toxicology
7	Rasayana chikitsa	Rejuvenation
8	Vrishachikitsa	Fertility Improvement

Table 3. Qualities of satva, rajas, and tamas individually, and the result of their combinations.

<table>
<tr><td>Satva</td><td>balance and continuity</td><td>-----</td><td rowspan="2">observation of 5 senses</td></tr>
<tr><td>Rajas</td><td>growth and division</td><td rowspan="2">production of 5 senses</td></tr>
<tr><td>Tamas</td><td>destruction</td><td>-----</td></tr>
</table>

Table 4. A brief description of various qualities of the three doshas, vata, pitta, and kapha.

	Vata	Pitta	Kapha
Composition	air and space	water and fire	earth and water
Basic Property	light, rough, mobile	penetrating, hot, liquid	oily, cold, heavy
Body Region	below navel	between clavicle and navel	above the clavicle
Functions	senses, intellect	eye function, skin, blood	moisture, lubrication, controls heart
Role in Digestive Process	excretion	digestion	-----

Table 5. A description of each tastes' components, properties, effect on the body during digestion and post-digestion.

Taste	Component	Properties	Hold/Cold	Post-Digestion
sweet	earth and water	cooling, oily	cold	sweet
sour	earth and fire	hot, dense	hot	sour
salt	water and fire	hot, dense	hot	sweet
bitter	air and space	cool, dry	cold	pungent
pungent	fire and water	hot, light	hot	pungent
astringent	air and earth	cool, dry	cold	pungent